# HIGH-PILED COMBUSTIBLE STORAGE DOCUMENT #2

## COMMODITY CLASSIFICATIONS REQUIREMENTS OF CHAPTER 23 OF THE 2010 California Fire Code

**CITY OF RIVERSIDE FIRE DEPARTMENT**
**Fire Prevention Division**

## HIGH PILED COMBUSTIBLE STORAGE DOCUMENT SUMMARIES

**Document 1** **General Information on the Requirements of Chapter 23 of the 2010 California Fire Code.** This document contains general information about high-piled combustible storage and the requirements of Chapter 23 of the 2010 California Fire Code. This document is recommended for first time customers trying to obtain as much practical information as possible prior to plan submittal.

**Document 2** **Commodity Classifications.** This document contains numerous examples of products and their associated commodity classifications. Use this document to aid in correctly determining the commodity class for a given product or products.

## PURPOSE

This document is designed to provide the customer a comprehensive resource in which to accurately determine the commodity classification for product(s) within a facility. Examples of various commodities from both the 2010 California Fire Code and 2010 NFPA 13, Standard on the Installation of Fire Sprinkler Systems, are provided as reference in commodity classification determination.

## SCOPE

The scope covers those materials specifically listed within this document or Document 1. The scope also covers those materials that may not be specifically referenced within this document however, exhibit similar characteristics to those listed. This document is not intended to address hazardous or explosive materials. Aerosols, flammable and combustible liquids, hazardous materials and explosives are outside the scope of this document, unless otherwise referenced.

## DEFINITIONS

Commodity classifications dictate requirements ranging from smoke vent and building access requirements to maximum pile dimensions and storage heights to sprinkler system design. Therefore, an accurate determination of the commodity classification is essential.

### I. General Commodities (Class I, II, III, IV and High Hazard)

#### Class I Commodities

CFC - Class I commodities are essentially noncombustible products on wooden or non-expanded polyethylene solid deck pallets, in ordinary corrugated cartons with or without single-thickness dividers, or in ordinary paper wrappings with or without pallets. Class I commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 2303.7.4. Examples of Class I commodities include, but are not limited to, the following:

- Alcoholic beverages not exceeding 20-percent alcohol in noncombustible containers
- Appliances noncombustible, electrical
- Cement in bags
- Ceramics
- Dairy products in nonwax-coated containers (excluding bottles)
- Dry insecticides
- Foods in noncombustible containers
- Fresh fruits and vegetables in nonplastic trays or containers
- Frozen foods
- Glass
- Glycol in metal cans
- Gypsum board Inert materials, bagged Insulation, noncombustible
- Noncombustible liquids in plastic containers having less than a 5-gallon (19 L) capacity
- Noncombustible metal products

NFPA 13 - A Class I commodity shall be defined as a non combustible product that meets one of the following criteria: 1) Placed directly on wooden pallets; 2) Placed in single-layer corrugated cartons, with or without single-thickness cardboard dividers, with or without pallets; 3) Shrink-wrapped or paper-wrapped as a unit load with or without pallets.

**Class II Commodities**

CFC - Class II commodities are Class I products in slatted wooden crates, solid wooden boxes, multiple-thickness paperboard cartons or equivalent combustible packaging material with or without pallets. Class II commodities are allowed to contain a limited amount of Group A plastics in accordance with Section 2303.7.4. Examples of Class II commodities include, but are not limited to, the following:

- Alcoholic beverages not exceeding 20-percent alcohol, in combustible containers
- Foods in combustible containers
- Incandescent or fluorescent light bulbs in cartons
- Thinly coated fine wire on reels or in cartons

NFPA 13 - A Class II commodity shall be defined as a noncombustible product that is in slatted wooden crates, solid wood boxes, multiple-layered corrugated cartons, or equivalent combustible packaging material, with or without pallets.

**Class III Commodities**

CFC - Class III commodities are commodities of wood, paper, natural fiber cloth, or Group C plastics or products thereof, with or without pallets. Products are allowed to contain limited amounts of Group A or B plastics, such as metal bicycles with plastic handles, pedals, seats and tires. Group A plastics shall be limited in accordance with Section 2303.7.4. Examples of Class III commodities include, but are not limited to, the following:

- Aerosol, Level 1 (see Chapter 28)
- Combustible fiberboard
- Cork, baled
- Feed, bagged
- Fertilizers, bagged
- Food in plastic containers
- Furniture: wood, natural fiber, upholstered, non-plastic, wood or metal with plastic-padded and covered arm rests
- Glycol in combustible containers not exceeding 25 percent
- Lubricating or hydraulic fluid in metal cans
- Lumber
- Mattresses, excluding foam rubber and foam plastics
- Noncombustible liquids in plastic containers having a capacity of more than 5 gallons (19 L)
- Paints, oil base, in metal cans
- Paper, waste, baled
- Paper and pulp, horizontal storage, or vertical storage that is banded or protected with approved wrap
- Paper in cardboard boxes
- Pillows, excluding foam rubber and foam plastics
- Plastic-coated paper food containers
- Rags, baled
- Rugs, without foam backing
- Sugar, bagged
- Wood, baled
- Wood doors, frames and cabinets
- Yarns of natural fiber and viscose

NFPA 13 - A Class III commodity shall be defined as a product fashioned from wood, paper, natural fibers or Group C plastics with or without cartons, boxes, or crates and with or without pallets. Class III commodities shall be permitted to contain a limited amount (5 percent by weight or volume or less) or Group A or Group B plastics.

**Class IV Commodities**

CFC - Class IV commodities are Class I, II or III products containing Group A plastics in ordinary corrugated cartons and Class I, II and III products, with Group A plastic packaging, with or without pallets. Group B plastics and free-flowing Group A plastics are also included in this class. The total amount of non-free-flowing Group A plastics shall be in accordance with Section 2303.7.4. Examples of Class IV commodities include, but are not limited to, the following:

- Aerosol, Level 2 (see Chapter 28)

- Alcoholic beverages, exceeding 20-percent but less than 80-percent alcohol, in cans or bottles in cartons.
- Clothing, synthetic or nonviscose
- Combustible metal products (solid)
- Furniture, plastic upholstered
- Furniture, wood or metal with plastic covering and padding
- Glycol in combustible containers (greater than 25 percent and less than 50 percent)
- Linoleum products paints, oil base in combustible containers
- Pharmaceutical, alcoholic elixirs, tonics, etc.
- Rugs, foam back
- Shingles, asphalt
- Thread or yarn, synthetic or nonviscose

NFPA 13 - A Class IV commodity shall be defined as a product, with or without pallets, that meets one of the following criteria: 1) Constructed partially or totally of Group B plastics; 2) Consists of free-flowing Group A plastics materials; 3) Contains within itself or its packaging an appreciable amount (5 percent to 15 percent by weight or 5 percent to 25 percent by volume) of Group A plastics.

**High Hazard Commodities**

CFC - High-hazard commodities are high-hazard products presenting special fire hazards beyond those of Class I, II, III or IV. Group A plastics not otherwise classified are included in this class. Examples of high-hazard commodities include, but are not limited to, the following:

- Aerosol, Level 3 (see Chapter 28)
- Alcoholic beverages, exceeding 80-percent alcohol, in bottles or cartons
- Commodities of any class in plastic containers in carousel storage
- Flammable solids (except solid combustible metals)
- Glycol in combustible containers (50 percent or greater)
- Lacquers, which dry by solvent evaporation, in metal cans or cartons
- Lubricating or hydraulic fluid in plastic containers
- Mattresses, foam rubber or foam plastics
- Pallets and flats which are idle combustible
- Paper, asphalt, rolled, horizontal storage
- Paper, asphalt, rolled, vertical storage
- Paper and pulp, rolled, in vertical storage which is unbanded or not protected with an approved wrap
- Pillows, foam rubber and foam plastics
- Pyroxylin
- Rubber tires
- Vegetable oil and butter in plastic containers

## II. Plastic Commodities (Group A, B and C Plastics)

This list should facilitate the identification in grouping plastic commodities into an A, B, or C group type. If difficulties still arise, contact the product manufacturer for the necessary information required to properly group the type of plastic the facility stores.

**Group A Plastics**

Group A plastics are plastic materials having a heat of combustion that is much higher than that of ordinary combustibles, and a burning rate higher than that of Group B plastics. Examples of Group A plastics include, but are not limited to, the following:

- ABS (acrylonitrile-butadiene-styrene copolymer)
- Acetal (polyformaldehyde)
- Acrylic (polymethyl methacrylate)
- Butyl rubber EPDM (ethylene propylene rubber)
- FRP (fiberglass-reinforced polyester)
- Natural rubber (expanded)
- Nitrile rubber (acrylonitrile butadiene rubber)
- PET or PETE (polyethylene terephthalate)
- Polybutadiene

- Polycarbonate
- Polyester elastomer
- Polyethylene
- Polypropylene
- Polystyrene (expanded and unexpanded)
- Polyurethane (expanded and unexpanded)
- PVC (polyvinyl chloride greater than 15 percent plasticized, e.g., coated fabric unsupported film)
- SAN (styrene acrylonitrile)
- SBR (styrene butadiene rubber

**Group B Plastics**

Group B plastics are plastic materials having a heat of combustion and a burning rate higher than that of ordinary combustibles, but not as high as those of Group A plastics. Examples of Group B plastics include, but are not limited to, the following:

- Cellulosics (cellulose acetate, cellulose acetate butyrate, ethyl cellulose)
- Chloroprene rubber
- Fluoroplastics (ECTFE, ethylene-chlorotrifluoroethyl-ene copolymer; ETFE, ethylene-tetrafluoroethylene copolymer; FEP, fluorinated ethylene-propylene copolymer)
- Natural rubber (non-expanded)
- Nylon (Nylon 6, Nylon 6/6)
- PVC (polyvinyl chloride greater than 5-percent, but not exceeding 15-percent plasticized)
- Silicone rubber

**Group C Plastics**

Group C plastics are plastic materials having a heat of combustion and a burning rate similar to those of ordinary combustibles. Examples of Group C plastics include, but are not limited to, the following:

- Fluoroplastics (PCTFE, polychlorotrifluoroethylene; PTFE, polytetrafluoroethylene)
- Melamine (melamine formaldehyde) henol VC (polyvinyl chloride, rigid or plasticized less than 5 percent, e.g., pipe, pipe fittings)
- PVDC (polyvinylidene chloride)
- PVDF (polyvinylidene fluoride)
- PVF (polyvinyl fluoride)
- Urea (urea formaldehyde)Mixed Commodities

## III. Mixed Commodities

Unless otherwise specified in Chapter 23 of the International Fire Code, this section refers to mixed commodities involving Group A plastics only. Group C plastics are considered Class III commodities and Group B plastics are considered Class IV commodities, unless otherwise specified.

With that said, facilities typically contain some sort of plastic within their storage practices. The plastic may be whole or part of the product itself or incorporated within the packaging or storing. Regardless, when plastics are found within Class I, II, III or IV commodities, it is referred to mixed commodities. As described previously, certain commodity classifications permit certain amount or percentages of specific plastics without changing the commodity classification. The following will provide guidance in determining the commodity classification when mixed commodities are present.

The percentage of plastics is a significant factor. The difference between percentages may be the difference in fire sprinklers within the facility or not. Therefore, an accurate percentage of plastic materials within the facility is required. Please note that this percentage of plastics is based on individual

pallet loads or cartons and is a function of the volume or weight of the packaging method for both expanded and non expanded plastics. The definitions for each are below.

**PLASTICS, NON EXPANDED** Those plastics with high densities, solid, or not otherwise categorized as expanded, such as polyethylene film, polystyrene toys, polyester and polystyrene plastic tote bins, polyethylene 55-gallon drums or smaller containers, etc.

**PLASTICS, EXPANDED (FOAMED OR CELLULAR)** Those plastics, the density of which is reduced by the presence of numerous small cavities (cells), interconnecting or not, dispersed throughout their mass. Examples include Styrofoam peanuts and cups. (CFC, NFPA 13)

Two of three percentages are needed to accurately determine the correct commodity classification of mixed commodities:

1) Percent by weight of expanded plastic

**or**

2) Percent by volume of expanded plastic

**and**

3) Percent by weight of unexpanded plastic

**Percent by weight of expanded plastic.** Based on the pallet load or per carton, this is the percentage of weight of expanded plastics as compared to the total weight of the pallet or carton.

**Percent by volume of expanded plastic.** Based on the pallet load or per carton, this is the percentage of volume of expanded plastics as compared to the total volume of the pallet or carton.

**Percent by weight of unexpanded plastic.** Based on pallet load or per carton, this is the percentage of weight of unexpanded plastics as compared to the total volume of the pallet or carton.

It is important to note that the above percentages must all be based on either the pallet load or per carton. This means that one percentage based on the pallet load and another percentage based on the carton is not acceptable. All percentages must have the same common denominator so to speak.

Take a pallet load of bicycles for example. The amount of plastics (pedals, reflector, tires, handle bar grips, etc.) is actually a very limited as compared to the metal (non-combustible) portions of the bicycle. The percentage of plastics in the pallet load of bicycles may be 25% or ¼ of the total weight or volume of the pallet. In another example of storing computers, the percentage of plastics may be as high as 75%, due to computers being mostly plastic with some exceptions. Figure 2301.7.4 below is taken from the 2009 International Fire Code to assist in determining the percentage of Group A plastics being stored. Note, this figure is only used when Group A plastics only are involved. Contact the Fire Prevention Division with any questions.

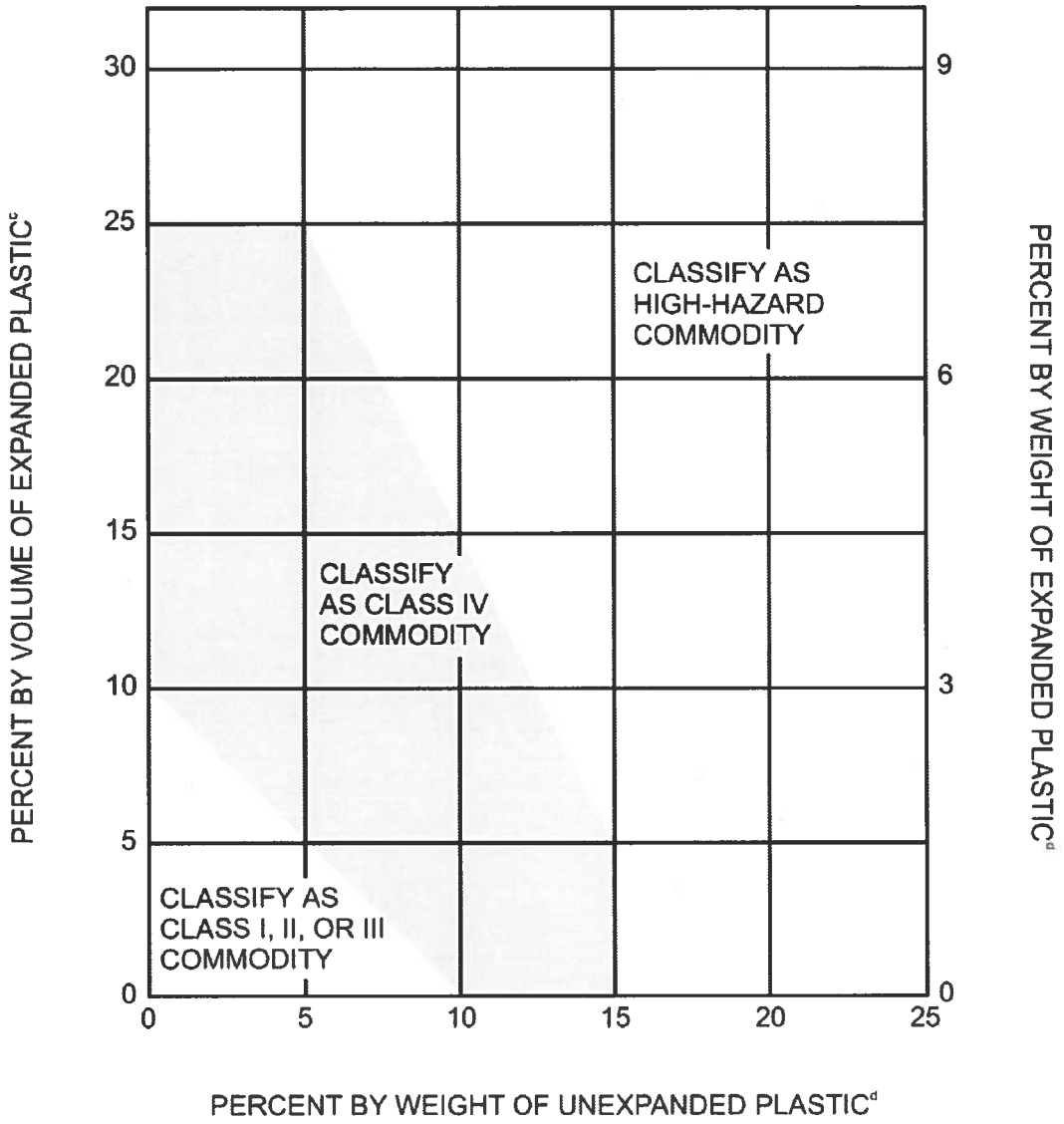


**Figure 2302.7.4 MIXED COMMODITIES [a,b]**

a. This figure is intended to determine the commodity classification of a mixed commodity in a package, carton or on a pallet where plastics are involved.

b. The following is an example of how to apply the figure: A package containing a Class III commodity has 12-percent Group A expanded plastic by volume. The weight of the unexpanded Group A plastic is 10 percent. This commodity is classified as a Class IV commodity. If the weight of the unexpanded plastic is increased to 14 percent, the classification changes to a high-hazard commodity.

c. Percent by volume =

$$\frac{\text{Volume of plastic in pallet load}}{\text{Total volume of pallet load, including pallet}}$$

d. Percent by weight =

$$\frac{\text{Weight of plastic in pallet load}}{\text{Total weight of pallet load, including pallet.}}$$

## COMMODITY CLASSIFICATION EXAMPLES

### Alphabetized Listing of Commodity Classes

| Commodity | Commodity Class |
|---|---|
| Aerosols | |
| Cartoned or uncartoned | |
| - Level 1 | Class III |
| Alcoholic Beverages | |
| Cartoned or uncartoned | |
| - Up to 20 percent alcohol in metal, glass, or ceramic containers | Class I |
| - Up to 20 percent alcohol in wood containers | Class II |
| - Exceeding 20 percent but less than 80 percent alcohol in can or bottles | Class IV |
| Ammunition | |
| Small arms, shotgun | |
| - Packaged, cartoned | Class IV |
| Appliances, Major (e.g., stoves, refrigerators) | |
| - Not packaged, no appreciable plastic exterior trim | Class I |
| - Corrugated, cartoned (no appreciable plastic trim) | Class II |
| Baked Goods | |
| Cookies, cakes, pies | |
| - Frozen, packaged in cartons[1] | Class II |
| - Packaged, in cartons | Class III |
| Batteries | |
| Dry cells (nonlithium or similar exotic metals) | |
| - Packaged in cartons | Class I |
| - Blister-packed in cartons | Class II |
| Automobile | |
| - Filled2 | Class I |
| Truck or larger | |
| - Empty or filled[2] | Group A plastics |
| Beans | |
| Dried | |
| - Packaged, cartoned | Class III |
| Bottles, Jars | |
| Empty, cartooned | |
| - Glass | Class I |
| - Plastic PET (polyethylene terephthalate) | Class IV |
| Filled noncombustible powders | |
| - Plastic PET | Class II |
| - Glass, cartooned | Class I |
| - Plastic, cartoned [less than 1 gal (3.8 L)] | Class IV |
| - Plastic, uncartoned (other than PET), any size | Group A plastics |
| - Plastic, cartoned or exposed [greater than 1 gal (3.8 L)] | Group A plastics |
| - Plastic, solid plastic crates | Group A plastics |
| - Plastic, open plastic crates | Group A plastics |
| Filled noncombustible liquids | |
| - Glass, cartooned | Class I |
| - Plastic, cartoned [less than 5 gal (18.9 L)] | Class I |
| - Plastic, open or solid plastic crates[3] | Group A plastics |
| - Plastic, PET | Class I |
| Boxes, Crates | |
| - Empty, wood, solid walls | Class II |
| - Empty, wood, slatted[4] | Outside of scope |
| Bread | |
| Wrapped cartoned | Class III |
| Butter | |
| Whipped spread | Class III |
| Candles | |
| Packaged, cartooned | |
| - Treat as expanded plastic | Group A plastics |
| Candy | |
| Packaged, cartoned | Class III |
| Canned Foods | |
| In ordinary cartons | Class I |
| Cans | |
| Metal | |
| - Empty | Class I |
| Carpet Tiles | |
| Cartoned | Group A plastics |
| Cartons | |
| Corrugated | |
| - Unassembled (neat piles) | Class III |
| - Partially assembled | Class IV |
| Wax coated, single walled | Group A plastics |
| Cement | |
| Bagged | Class I |
| Cereals | |
| Packaged, cartoned | Class III |
| Charcoal | |
| Bagged | |
| - Standard | Class III |
| Cheese | |
| - Packaged, cartooned | Class III |
| - Wheels, cartoned | Class III |
| Chewing Gum | |
| Packaged, cartoned | Class III |
| Chocolate | |
| Packaged, cartoned | Class III |
| Cloth | |
| Cartoned and not cartooned | |
| - Natural fiber, viscose | Class III |
| - Synthetic[5] | Class IV |
| Cocoa Products | |
| Packaged, cartoned | Class III |
| Coffee | |
| - Canned, cartooned | Class I |
| - Packaged, cartoned | Class III |
| Coffee Beans | |
| Bagged | Class III |
| Cotton | |
| Packaged, cartoned | Class III |
| Diapers | |
| - Cotton, linen | Class III |
| - Disposable with plastics and nonwoven fabric (in cartons) | Class IV |
| - Disposable with plastics and nonwoven fabric (uncartoned), plastic wrapped | Group A plastics |
| Dried Foods | |
| Packaged, cartoned | Class III |
| Fertilizers | |
| Bagged | |
| - Phosphates | Class I |
| - Nitrates | Class II |
| Fiberglass Insulation | |
| - Paper-backed rolls, bagged or unbagged | Class IV |
| File Cabinets | |
| Metal | |
| - Cardboard box or shroud | Class I |
| Fish or Fish Products | |
| Frozen | |
| - Nonwaxed, nonplastic packaging | Class I |
| - Waxed-paper containers, cartooned | Class II |
| - Boxed or barreled | Class II |
| - Plastic trays, cartoned | Class III |
| Canned | |
| - Cartoned | Class I |

| | |
|---|---|
| Frozen Foods | |
| Nonwaxed, nonplastic packaging | Class I |
| - Waxed-paper containers, cartooned | Class II |
| - Plastic trays | Class III |
| Fruit | |
| Fresh | |
| - Nonplastic trays or containers | Class I |
| - With wood spacers | Class I |
| Furniture | |
| Wood | |
| - No plastic coverings or foam plastic cushioning | Class III |
| - With plastic coverings | Class IV |
| - With foam plastic cushioning | Group A plastics |
| Grains — Packaged in Cartons | |
| - Barley | Class III |
| - Rice | Class III |
| - Oats | Class III |
| Ice Cream | Class I |
| Leather Goods | Class III |
| Leather Hides | |
| Baled | Class II |
| Light Fixtures | |
| Nonplastic | |
| - Cartoned | Class II |
| Lighters | |
| Butane | |
| - Blister-packed, cartooned | Group A plastics |
| - Loose in large containers (Level 3 aerosol) | Outside of scope |
| Liquor | |
| 100 proof or less, 1 gal (3.8 L) or less, cartooned | |
| - Glass (palletized)6 | Class IV |
| - Plastic bottles | Class IV |
| Marble | |
| Artificial sinks, countertops | |
| - Cartoned, crated | Class II |
| Margarine | |
| - Up to 50 percent oil (in paper or plastic containers) | Class III |
| - Between 50 percent and 80 percent oil (in any packaging) | Group A plastics |
| Matches | |
| Packaged, cartooned | |
| - Paper | Class IV |
| - Wood | Group A plastics |
| Mattresses | |
| - Standard (box spring) | Class III |
| - Foam (in finished form) | Group A plastics |
| Meat, Meat Products | |
| - Bulk | Class I |
| - Canned, cartooned | Class I |
| - Frozen, nonwaxed, nonplastic containers | Class I |
| - Frozen, waxed-paper containers | Class II |
| - Frozen, expanded plastic trays | Class II |
| Metal Desks | |
| - With plastic tops and trim | Class I |
| Milk | |
| - Nonwaxed-paper containers | Class I |
| - Waxed-paper containers | Class I |
| - Plastic containers | Class I |
| - Containers in plastic crates | Group A plastics |
| Motors | |
| - Electric | Class I |
| Nail Polish | |
| - 1-oz to 2-oz (29.6-ml to 59.1-ml) glass, cartooned | Class IV |
| - 1-oz to 2-oz (29.6-ml to 59.1-ml) plastic bottles, cartooned | Group A plastics |
| Nuts | |
| - Canned, cartooned | Class I |
| - Packaged, cartooned | Class III |
| - Bagged | Class III |
| Paints | |
| Friction-top cans, cartooned | |
| - Water-based (latex) | Class I |
| - Oil-based | Class IV |
| Paper Products | |
| - Books, magazines, stationery, plastic-coated paper food containers, newspapers, cardboard games, or cartoned tissue products | Class III |
| - Tissue products, uncartoned and plastic wrapped | Group A plastics |
| Paper, Rolled | |
| In racks or on side | |
| - Medium- or heavyweight In racks | Class III |
| - Lightweight | Class IV |
| Paper, Waxed | |
| Packaged in cartons | Class IV |
| Pharmaceuticals | |
| Pills, powders | |
| - Glass bottles, cartooned | Class II |
| - Plastic bottles, cartooned | Class IV |
| Nonflammable liquids | |
| - Glass bottles, cartoned | Class II |
| Photographic Film | |
| - Motion picture or bulk rolls of film in polycarbonate, polyethylene, or metal cans; polyethylene bagged in cardboard boxes | Class II |
| - 35-mm in metal film cartridges in polyethylene cans in cardboard boxes | Class III |
| - Paper, in sheets, bagged in polyethylene, in cardboard boxes | Class III |
| - Rolls in polycarbonate plastic cassettes, bulk wrapped in cardboard boxes | Class IV |
| Plastic Containers (except PET) | |
| - Noncombustible liquids or semiliquids in plastic containers less than 5 gal (18.9 L) capacity | Class I |
| - Noncombustible liquids or semiliquids (such as ketchup) in plastic containers with nominal wall thickness of ¼ in. (6.4 mm) or less and larger than 5 gal (18.9) capacity | Class II |
| - Noncombustible liquids or semiliquids (such as ketchup) in plastic containers with nominal wall thickness greater than ¼ in. (6.4 mm) and larger than 5 gal (18.9 L) capacity | Group A plastics |
| Polyurethane | |
| - Cartoned or uncartoned expanded | Group A plastics |
| Poultry Products | |
| - Canned, cartooned | Class I |
| - Frozen, nonwaxed, nonplastic containers | Class I |
| - Frozen (on paper or expanded plastic trays) | Class II |
| Powders | |
| Ordinary combustibles — free flowing | |
| - In paper bags (e.g., flour, sugar) | Class II |
| Rags | |
| Baled | |
| - Natural fibers | Class III |
| - Synthetic fibers | Class IV |
| Rubber | |
| - Natural, blocks in cartons | Class IV |
| - Synthetic | Group A plastics |

| | |
|---|---|
| Salt | |
| - Bagged | Class I |
| - Packaged, cartoned | Class II |
| Shingles | |
| - Asphalt-coated fiberglass | Class III |
| - Asphalt-impregnated felt | Class IV |
| Shock Absorbers | |
| - Metal dust cover | Class II |
| - Plastic dust cover | Class III |
| Signatures | |
| Books, magazines | |
| - Solid array on pallet | Class II |
| Skis | |
| - Wood | Class III |
| - Foam core | Class IV |
| Stuffed Toys | |
| Foam or synthetic | Group A plastics |
| Syrup | |
| - Drummed (metal containers) | Class I |
| - Barreled, wood | Class II |
| Textiles | |
| Natural fiber clothing or textile products | Class III |
| Synthetics (except rayon and nylon) — 50/50 blend or less | |
| - Thread, yarn on wood or paper spools | Class III |
| - Fabrics | Class III |
| - Thread, yarn on plastic spools | Class IV |
| - Baled fiber | Group A plastics |
| Synthetics (except rayon and nylon) — greater than 50/50 blend | |
| - Thread, yarn on wood or paper spools | Class IV |
| - Fabrics | Class IV |
| - Baled fiber | Group A plastics |
| - Thread, yarn on plastic spools | Group A plastics |
| Rayon and nylon | |
| - Baled fiber | Class IV |
| - Thread, yarn on wood or paper spools | Class IV |
| - Fabrics | Class IV |
| - Thread, yarn on plastic spools | Group A plastics |
| Tobacco Products | |
| In paperboard cartons | Class III |
| Transformers | |
| Dry and oil filled | Class I |
| Vinyl-Coated Fabric | |
| Cartoned | Group A plastics |
| Vinyl Floor Coverings | |
| - Tiles in cartons | Class IV |
| - Rolled | Group A plastics |
| Wax-Coated Paper | |
| Cups, plates | |
| - Boxed or packaged inside cartons (emphasis on packaging) | Class IV |
| - Loose inside large cartons | Group A plastics |
| Wax | |
| Paraffin/petroleum wax, blocks, cartoned | Group A plastics |
| Wire | |
| - Bare wire on metal spools on wood skids | Class I |
| - Bare wire on wood or cardboard spools on wood skids | Class II |
| - Bare wire on metal, wood, or cardboard spools in cardboard boxes on wood skids | Class II |
| - Single- or multiple-layer PVC-covered wire on metal spools on wood skids | Class II |
| - Insulated (PVC) cable on large wood or metal spools on wood skids | Class II |
| - Bare wire on plastic spools in cardboard boxes on wood skids | Class IV |
| - Single- or multiple-layer PVC-covered wire on plastic spools in cardboard boxes on wood skids | Class IV |
| - Single, multiple, or power cables (PVC) on large plastic spools | Class IV |
| - Bulk storage of empty plastic spools | Group A plastics |
| Wood Products | |
| - Solid piles — lumber, plywood, particleboard, pressboard (smooth ends and edges) | Class II |
| - Spools (empty) | Class III |
| - Toothpicks, clothespins, hangers in cartons | Class III |
| - Doors, windows, wood cabinets, and furniture | Class III |
| - Patterns | Class IV |

[1] The product is presumed to be in a plastic-coated package in a corrugated carton. If packaged in a metal foil, it can be considered Class I.

[2] Most batteries have a polypropylene case and, if stored empty, should be treated as a Group A plastic. Truck batteries, even where filled, should be considered a Group A plastic because of their thicker walls.

[3] As the openings in plastic crates become larger, the product behaves more like a Class III commodity. Conversely, as the openings become smaller, the product behaves more like a plastic.

[4] These items should be treated as idle pallets.

[5] Tests clearly indicate that a synthetic or synthetic blend is considered greater than Class III.

[6] When liquor is stored in glass containers in racks, it should be considered a Class III commodity; where it is palletized, it should be considered a Class IV commodity.

## Examples of Class I Commodities

Alcoholic Beverages
- Cartoned or uncartoned
  - Up to 20 percent alcohol in metal, glass, or ceramic containers

Appliances, Major (e.g., stoves, refrigerators)
- Not packaged, no appreciable plastic exterior trim

Batteries
- Dry cells (nonlithium or similar exotic metals)
  - Packaged in cartons
  - Automobile
  - Filled*

Bottles, Jars
- Empty, cartooned
  - Glass
  - Filled noncombustible liquids
  - Glass, cartooned
  - Plastic, cartoned [less than 5 gal (18.9 L)]
  - Plastic, PET
  - Filled noncombustible powders
  - Glass, cartoned

Canned Foods
In ordinary cartons
Cans
Metal
- Empty
Cement
Bagged
Coffee
Canned, cartoned
Fertilizers
Bagged
- Phosphates
File Cabinets
Metal
- Cardboard box or shroud
Fish or Fish Products
Frozen
- Nonwaxed, nonplastic packaging
Canned
- Cartoned
Frozen Foods
Nonwaxed, nonplastic packaging
Fruit
Fresh
- Nonplastic trays or containers
- With wood spacers
Ice Cream
Meat, Meat Products
- Bulk
- Canned, cartooned
- Frozen, nonwaxed, nonplastic containers
Metal Desks
- With plastic tops and trim
Milk
- Nonwaxed-paper containers
- Waxed-paper containers
- Plastic containers
Motors
- Electric
Nuts
- Canned, cartoned
Paints
Friction-top cans, cartooned
- Water-based (latex)
Plastic Containers
- Noncombustible liquids or semiliquids in plastic containers less than 5 gal (18.9 L) capacity
Poultry Products
- Canned, cartooned
- Frozen, nonwaxed, nonplastic containers
Salt
Bagged
Syrup
Drummed (metal containers)
Transformers
Dry and oil filled
Wire
Bare wire on metal spools on wood skids

*Most batteries have a polypropylene case and, if stored empty, should be treated as a Group A plastic. Truck batteries, even where filled, should be considered a Group A plastic because of their thicker walls.

## Examples of Class II Commodities

Alcoholic Beverages
Up to 20 percent alcohol in wood containers
Appliances, Major (e.g., stoves)
Corrugated, cartoned (no appreciable plastic trim)
Baked Goods
Cookies, cakes, pies
- Frozen, packaged in cartons*
Batteries
Dry cells (nonlithium or similar exotic metals) in blister pack in cartons
Bottles, Jars
Filled noncombustible powders
- Plastic PET
Boxes, Crates
Empty, wood, solid walls
Fertilizers
Bagged
- Nitrates
Fish or Fish Products
Frozen
- Waxed-paper containers, cartooned
- Boxed or barreled
Frozen Foods
Waxed-paper containers, cartoned
Leather Hides
Baled
Light Fixtures
Nonplastic
- Cartoned
Marble
Artificial sinks, countertops
- Cartoned, crated
Meat, Meat Products
- Frozen, waxed-paper containers
- Frozen, expanded plastic trays
Pharmaceuticals
Pills, powders
- Glass bottles, cartoned
Nonflammable liquids
- Glass bottles, cartoned
Photographic Film
- Motion picture or bulk rolls of film in polycarbonate, polyethylene, or metal cans; polyethylene bagged in cardboard boxes
Plastic Containers
Noncombustible liquids or semiliquids (such as ketchup) in plastic containers with nominal wall thickness of ¼ in. (6.4 mm) or less and larger than 5 gal (18.9 L) capacity
Poultry Products
Frozen (on paper or expanded plastic trays)
Powders (ordinary combustibles — free flowing)
In paper bags (e.g., flour, sugar)
Salt
Packaged, cartoned
Shock Absorbers
Metal dust cover
Signatures
Book, magazines
- Solid array on pallet
Syrup
Barreled, wood
Wire
- Bare wire on wood or cardboard spools on wood skids
- Bare wire on metal, wood, or cardboard spools in cardboard boxes on wood skids
- Single- or multiple-layer PVC-covered wire on metal spools on wood skids
- Insulated (PVC) cable on large wood or metal spools on wood skids
Wood Products
Solid piles
- Lumber, plywood, particle board, pressboard (smooth ends and edges)

*The product is in a plastic-coated package in a corrugated carton. If packaged in a metal foil, it can be considered Class I.

## Examples of Class III Commodities

Aerosols
  Cartoned or uncartoned
  - Level 1
Baked Goods
  Cookies, cakes, pies
  - Packaged, in cartons
Beans
  Dried
  - Packaged, cartoned
Bread
  Wrapped, cartoned
Butter
  Whipped spread
Candy
  Packaged, cartoned
Cartons
  Corrugated
  - Unassembled (neat piles)
Cereals
  Packaged, cartoned
Charcoal
  Bagged
  - Standard
Cheese
  - Packaged, cartooned
  - Wheels, cartoned
Chewing Gum
  Packaged, cartoned
Chocolate
  Packaged, cartoned
Cloth
  Cartoned and not cartooned
  - Natural fiber, viscose
Cocoa Products
  Packaged, cartoned
Coffee
  Packaged, cartoned
Coffee Beans
  Bagged
Cotton
  Packaged, cartoned
Diapers
  Cotton, linen
Dried Foods
  Packaged, cartoned
Fish or Fish Products
  Frozen
  - Plastic trays, cartoned
Frozen Foods
  Plastic trays
Furniture
  Wood
  - No plastic coverings or foam plastic cushioning
Grains — Packaged in Cartons
  - Barley
  - Rice
  - Oats
Margarine
  Up to 50 percent oil (in paper or plastic containers)
Mattresses
  Standard (box spring)
Nuts
  - Packaged, cartooned
  - Bagged
Paper Products
  Books, magazines, stationery, plastic-coated paper food containers, newspapers, cardboard games, cartoned tissue products
Paper, Rolled
  In racks or on side
  - Medium or heavyweight
Photographic Film
  - 35-mm in metal film cartridges in polyethylene cans in cardboard boxes
  - Paper, in sheets, bagged in polyethylene, in cardboard boxes
PVC (polyvinyl chloride)
  - Flexible (e.g., cable jackets, plasticized sheets)
  - Rigid (e.g., pipe, pipe fittings)
  - Bagged resins
Rags
  Baled
  - Natural fibers
Shingles
  Asphalt-coated fiberglass
Shock Absorbers
  Plastic dust cover
Skis
  Wood
Textiles
  Natural fiber clothing or textile products
  Synthetics (except rayon and nylon) — 50/50 blend or less
  - Thread, yarn on wood or paper spools
  - Fabrics
Tobacco Products
  In paperboard cartons
Wood Products
  - Spools (empty)
  - Toothpicks, clothespins, hangers in cartons
  - Doors, windows, wood cabinets, and furniture

## Examples of Class IV Commodities

Ammunition
  Small arms, shotgun
  - Packaged, cartoned
Bottles, Jars
  - Plastic PET (polyethylene terephthalate)
  Empty, cartoned
  Filled noncombustible powders
  - Plastic, cartoned [less than 1 gal (3.8 L)]
Cartons
  Corrugated
  - Partially assembled
Cloth
  Cartoned and not cartooned
  - Synthetic[1]
Diapers
  Disposable with plastics and nonwoven fabric (in cartons)
Fiberglass Insulation
  - Paper-backed rolls, bagged or unbagged
Furniture
  Wood
  - With plastic coverings
Liquor
  100 proof or less, 1 gal (3.8 L) or less, cartooned
  - Glass (palletized)[2]
  - Plastic bottles
Matches
  Packaged, cartooned
  - Paper
Nail Polish
  1-oz to 2-oz (29.6-ml to 59.1-ml) glass, cartoned

Paints
Friction-top cans, cartooned
- Oil based
Paper, Rolled
In racks
- Lightweight
Paper, Waxed
Packaged in cartons
Pharmaceuticals
Pills, powders
- Plastic bottles, cartoned
Photographic Film
- Rolls in polycarbonate plastic cassettes, bulk wrapped in cardboard boxes
PVA (polyvinyl alcohol) Resins
Bagged
Rags
Baled
- Synthetic fibers
Rubber
Natural, blocks in cartons
Shingles
Asphalt-impregnated felt
Skis
Foam core
Textiles
Synthetics (except rayon and nylon) — 50/50 blend or less
- Thread, yarn on plastic spools
Synthetics (except rayon and nylon) — greater than 50/50 blend
- Thread, yarn on wood or paper spools
- Fabrics
Rayon and nylon
- Baled fiber
- Thread, yarn on wood or paper spools
- Fabrics
Vinyl Floor Coverings
Tiles in cartons
Wax-Coated Paper
Cups, plates
Wire
- Boxed or packaged inside cartons (emphasis is on packaging)
- Bare wire on plastic spools in cardboard boxes on wood skids
- Single- or multiple-layer PVC-covered wire on plastic spools in cardboard boxes on wood skids
- Single, multiple, or power cables (PVC) on large plastic spools
Wood Products
Patterns

[1] Tests clearly indicate that a synthetic or synthetic blend is considered greater than Class III.

[2] Where liquor is stored in glass containers in racks, it should be considered a Class III commodity; where it is palletized, it should be considered a Class IV commodity.

## Examples of Group A Plastic Commodities

Batteries
Truck or larger
- Empty or filled[1]
Bottles, Jars
Empty, cartooned
- Plastic (other than PET), any size
Filled noncombustible liquids
- Plastic, open or solid plastic crates[2]
Filled noncombustible powders
- Plastic, cartoned or uncartoned [greater than 1 gal (3.8 L)]
- Plastic, solid plastic crates
- Plastic, open plastic crates
Candles
Packaged, cartooned
- Treat as expanded plastic
Carpet Tiles
Cartoned
Cartons
Wax coated, single walled
Diapers
Disposable with plastics and nonwoven fabric (uncartoned), plastic wrapped
Furniture
Wood
- With foam plastic cushioning
Lighters
Butane
- Blister-packed, cartoned
Margarine
Between 50 percent and 80 percent oil (in any packaging)
Matches
Packaged, cartooned
- Wood
Mattresses
Foam (in finished form)
Milk
Containers in plastic crates
Nail Polish
1-oz to 2-oz (29.6-ml to 59.1-ml) plastic bottles, cartoned
Paper Products
Tissue products, uncartoned and plastic wrapped
Plastic Containers
- Combustible or noncombustible solids in plastic containers and empty plastic containers
- Noncombustible liquids or semiliquids (such as ketchup) in plastic containers with nominal wall thickness greater than ¼ in. (6.4 mm) and larger than 5 gal (18.9 L) capacity
Polyurethane
Cartoned or uncartoned expanded
Rubber
Synthetic
Stuffed Toys
Foam or synthetic
Textiles
Synthetics (except rayon and nylon) — 50/50 blend or less
- Baled fiber
Synthetics (except rayon and nylon)— greater than 50/50 blend
- Baled fiber
- Thread, yarn on plastic spools
Rayon and nylon
- Thread, yarn on plastic spools
Vinyl-Coated Fabric
Cartoned
Vinyl Floor Coverings
Rolled
Wax-Coated Paper
Cups, plates
- Loose inside large cartons
Wax
Paraffin/petroleum wax, blocks, cartoned

Wire

Bulk storage of empty plastic spools

[1] Most batteries have a polypropylene case and, if stored empty, should be treated as a Group A plastic. Truck batteries, even where filled, should be considered a Group A plastic because of their thicker walls.

[2] As the openings in plastic crates become larger, the product behaves more like Class III. Conversely, as the openings become smaller, the product makeup behaves more like a plastic.